

Date: Fri, 30 Jul 93 04:30:10 PDT
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V93 #920
To: Info-Hams

Info-Hams Digest Fri, 30 Jul 93 Volume 93 : Issue 920

Today's Topics:

ARRL Internet connection
How many people actually use paddles ?
SMD rework was(Re: Alinco DJ-580 Intermod Reduction)
TS50 Illegal!

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text herein consists of personal comments and does not represent the official policies or positions of any party. Your mileage may vary. So there.

Date: 29 Jul 93 13:52:20 GMT
From: psinntp!arrrl.org@uunet.uu.net
Subject: ARRL Internet connection
To: info-hams@ucsd.edu

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In rec.radio.amateur.misc, datwyler@moons.sim.es.com (Doug Datwyler) writes:
>I agree that the ARRL should be here, as they are promoting the hobby,
>adding to discussions, fueling flames, dousing flames, etc....
>
>This discussion should end soon.
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Yes, please. The "vote" in news and email is one against, everyone else for. Case closed.

Jon Bloom, KE3Z | jbloom@arrl.org
American Radio Relay League |
225 Main St., Newington CT 06111 |

Date: 28 Jul 1993 18:45:47 GMT
From: mvb.saic.com!zipppy.Telcom.Arizona.EDU!arizona.edu!CS.Arizona.EDU!noao!ncar!
gatech!howland.reston.ans.net!news.ans.net!malgudi.oar.net!news.ysu.edu!
yfn.ysu.edu!ag821@network.ucsd.edu
Subject: How many people actually use paddles ?
To: info-hams@ucsd.edu

In a previous article, wrb@cbnews.cb.att.com (wallace.r.blackburn) says:

>In article <1993Jul27.172349.5003@uoft02.utoledo.edu> mohan@tulip.es.utoledo.edu
writes:

>>Hello,

>>How much percentage of cw operators use paddles?

>>I want to work on cw when my license (finally) gets here.

>>Is it difficult to learn to send with the paddle/keyer combos?

>>And my understanding is that paddles are expensive? Can someone with experience

>>suggest a few paddles in different price ranges?

>>Thanks :)

>>--mohan/Waiting...

>>=====

>>+ Mohanakrishna Pakkurti	+ mohan@jupiter.cse.utoledo.edu	+
>>+ HOME: 2239 University Hills Blvd #204, Toledo OH 43606. Phone:(419)536-9073		+

>>=====

>

>Mohan:

>

>I don't know the percentage, but many cw ops use paddle/keyer combos. As
>far as difficulty, it varies with the person. Bencher paddles come with a
>nice little reprint of an article going over the basics of using paddles
>and an iambic keyer. In my opinion, the hardest thing to learn is actually
>using it iambically. By that I mean, using the fact that squeezing the
>paddles together makes alternating dits and dahs. I've seen very
>experienced operators using the paddles like two separate keys - one for
>dits and one for dahs. Once you get the hang of iambic operation, it
>hardly looks like you are moving your fingers.

>

>For example, sending CQ:

>

> - squeeze the paddles together, hitting the thumb (dahs) first,
> hold until you get a C

>

> - hold the thumb (dahs) - anytime during the second dah, tap the
> dit paddle, making a Q

>

>It's kind of hard to explain, you just need to play around with it.

>

>A good set of black base Benchers is under \$80, a CMOS Super Keyer II KIT

```
>is under $50.  
>  
>Hope this helps.  
>--  
>  
>  
>+=====+ Happy user of OS/2 2.0!  
>| Wally Blackburn | Ask me about it!  
>
```

I agree with the CMOS Super keyer .. but you can get a parts kit for \$26 from Richard Rathburn, KB6NQ, R&R Associates, 3106 Glendon Ave. Los Angeles, CA 90034 (that includes shipping)..best contest and all around keyer you can find.. makes it easy to send.. real good self completing dots and dashes.

I collect straight keys, and paddles. Th Benchers is overpriced for what it is, breaks apart very easily and isn't the best for the money. For about the same price you can get a solid brass set of Kent Paddles that will blow the doors off a set of Benchers. When I got my Kent, I sold my Benchers cheap and mine were almost new.

73

Jeff, AC4HF
--
Jeff M. Gold, AC4HF
Manager, Academic Computing Support
Tennessee Technological University

Date: 29 Jul 93 11:09:04 GMT
From: ogicse!emory!rsiatl!ke4zv!gary@network.ucsd.edu
Subject: SMD rework was(Re: Alinco DJ-580 Intermod Reduction)
To: info-hams@ucsd.edu

In article <CAKr65.J00@hpcvsnz.cv.hp.com> tomb@lsid.hp.com (Tom Bruhns) writes:
>Gary Coffman (gary@ke4zv.uucp) wrote:

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>  
>(after an initial post about how easy surface mount rework is,  
>replying to a comment about how hot air can cause problems on  
>adjacent components...)  
>  
>: Yes, but it's relatively easy to control the hot air flow. There are  
>: two methods generally in use. The first is sheet metal shrouds of  
>: various shapes to direct the air. The other, and the one I prefer,  
>: is to use modelling clay to build a heat dam around the part to be
```

>: reworked. The clay is easy to apply, peels right off when done, and
>: is reusable.

>

>Hmm. Now it's sounding not quite so easy. I have to build a heat
>dam of modeling clay just to remove a part? Actually, I tend to agree
>with Gary that smt work is pretty easy. But the equipment that makes
>it easy isn't cheap and isn't likely to be found in home hobby
>workshops. We use Metcal irons here; they have a variety of
>easily changed tips that let you remove various components _fairly_
>easily. It's not even too hard to put down SOIC and PLCC ICs (0.05"
>lead spacing) and assorted passive parts with a fairly standard
>Weller iron, but when you get to fine-pitch parts, it gets a lot
>tougher. Even our very carefully-controlled manufacturing processes
>have been known to screw up on rare occasion ;-)

I've used the Metcal, and the Weller special tips too, and I don't like them. They're like the hot tweezers for removing DIPs in that you never have the right one installed when you need it, and they don't usually heat all the pins to release temperature at once even if you have the right tip. So you have to let the iron cool, change the tip, and wait for it to heat up before you can remove the part. It only takes a couple of seconds to roll a bit of modelling clay between your fingers, stick it around the part, and apply the hot air. You can then *watch* the solder melt, something you can't do with the shaped tips, and remove the part, either by tapping the board on the bench, or with stainless tweezers. And you don't have to use clay in all cases, only when there's an adjacent part you're afraid will get too much heat. Lot's of SMD isn't that dense.

The proper tools are essential, but only a small fraction of the battle. It takes good technique to make them work. You can't get away with the sloppy methods that will sometimes do on thruhole boards. On the other hand, you're much less likely to trash the board when using proper technique on a surface mount board than you are when using proper technique on a thruhole board. That's because you are working with a consistent surface phenomena rather than depending on the manufacturing quality of via plating or laminate glue.

If you prepare the surface pads properly, and apply the right amount of good solder paste, it's like magic when you apply the hot air. The part will self-align via the surface tension of the solder. It's so much easier than trying to solder leg at a time with even the finest tipped iron. Invariably the part will move out of position when you try to remove the iron. So you have to resort to tweezers or dental probes to hold the part in place, and they never keep it aligned perfectly. All that hassle, and the third or fourth hand it requires, is gone with hot air.

I've played with \$15,000 hot air rework stations. They have binocular microscopes, XY positioner stages, vacuum pickups, and the hot air source. They're neat for some jobs, but to use them you have to dismount the board from the equipment, bring it to the rework station, position it on the stage, select and mount the proper shape hot air nozzle, and change the component. Then you have to reverse the process and put it back in service. With the Pyropen, jeweler's loop, clay, paste, and tweezers, I carry them in a pocket pouch to the job, I work on the board, often still mounted in the equipment, and have it back on line much faster, and for much less money.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: 29 Jul 93 12:36:16 GMT

From: ogicse!emory!rsiatl!ke4zv!gary@network.ucsd.edu

Subject: TS50 Illegal!

To: info-hams@ucsd.edu

In article <CAw5Jn.Etn@srgenprp.sr.hp.com> alanb@sr.hp.com (EEDP System) writes:

>Gary Coffman (gary@ke4zv.uucp) wrote:

>: In article <CAu6wA.I6@srgenprp.sr.hp.com> alanb@sr.hp.com (Alan Bloom) writes:

>: >100% modulated AM has a 4/1 peak (PEP) to carrier power ratio.

>

>: I hate to beat this to death, but I'm still unconvinced. My reference

>: says differently. What's your reference for 4/1 for AM? ...

>: Reference Data for Radio Engineers_

>: says the PEP in VA of AM is 2.83 times carrier. I've been using that

>: book for a lot of years, and I believe it's correct.

>

>Bob McGwier (n4hy@tang.ccr-p.ida.org) wrote:

>

>: I think I agree with Gary. The sidebands are in quadrature so they don't

>: add. Your formula assumes they are in phase.

>

>Sheesh, it's not like this is some personal theory of mine. It is well-known

>that the modulation peaks of a 100%-modulated AM signal are 6 dB above

>the carrier.

>

>I've already given the clearest technical explanation I know, but if

>you prefer to refer to authority, I'll see if I can dig up some

>references:

>
>I don't seem to have a recent ARRL Handbook here at work (I USED to --
>I guess somebody "borrowed" it...), but in my 1977 edition in the
>"HF Transmitting" chapter, page 153, it says "The PEP output of any
>a-m signal is four times the carrier output power..." Again, on
>page 369 ("AM and DSP" chapter), it says "The amplitude values shown
>in Fig. 12-2 correspond to ... voltage. The power in the wave varies
>as the SQUARE of ... the voltage, so at the peak of the modulation
>upswing the instantaneous power in the envelope of Fig 12-2C [a 100%
>modulated AM signal] is four times the unmodulated carrier power..."
>
>In my equally old (18th edition) of the _Radio Handbook_ edited by
>Bill Orr W6SAI of Eimac, in the chapter on "Amplitude Modulation"
>page 310, it says "Figure 1D illustrates the maximum obtainable
>distortionless modulation with a sine modulating wave, the r-f
>voltage at the peak of the r-f cycle varying from zero to twice the
>unmodulated value, and the r-f power varying from zero to four times
>the unmodulated value (the power varies as the square of the voltage)."
>
>Gary evidently has an old copy of the _Reference_ book. It is now
>called _Reference Data for Engineers_ and uses a different page
>numbering scheme. I couldn't find a reference to PEP AM power
>specifically, but on page 23-4 it gives the equation for an AM
>signal: $e(t) = A_o [1 + m s(t)] \cos(W_c t)$, where A_o is the amplitude,
> $m s(t)$ is the modulation waveform (absolute value ≤ 1) and W_c is the
>carrier frequency. When $m s(t) = +1$ (peak of 100% modulation), the
>carrier (the $\cos(W_c t)$ part) is multiplied by 2, so it's twice the
>voltage or 4 times the power.
>
>I'm amazed that anyone considers this a controversial issue.

Common knowledge isn't always common, or correct. Especially with
something as old hat as AM, sometimes the oldest books are the
best. :-)

I dug a little deeper and can give a good mathematical explanation
of the reason the peak amplitude isn't 4X now.

Let's assume we are modulating a carrier represented as

$$A_o \cos(w \cdot t)$$

When we modulate with a sinewave, we get two sidebands in quadrature

$$.5 \cdot M_a \cdot A_o \cos((w-p) \cdot t) \text{ and } .5 \cdot M_a \cdot A_o \cos((w+p) \cdot t)$$

where M_a is the modulation degree $0 < M_a < 1$ with a $M_a = 1$ equaling 100%
modulation, and where 'p' is the instantaneous phase vector of the

modulating waveform.

And because the sidebands are in quadrature,

$$\cos((w+p)*t)*\cos((w-p)*t) = \sqrt{2}*\cos(wt).$$

So the combined vector amplitude of the sidebands can be expressed as

$$\sqrt{2}*.5*Ma*Ao*\cos(wt) \text{ or } 0.707*Ma*Ao*\cos(wt)$$

Now we add in the carrier at an instant and $Ma=1$

$$Ao*\cos(wt) + 0.707*Ao*\cos(wt) = 1.707*Ao*\cos(wt)$$

So we can see that the instantaneous voltage is less than twice the unmodulated voltage. Since the voltage is less than twice, the PEP is less than 4X. It's about 2.9X.

There's a cute little vector diagram on pg 527 of the Fourth Edition of Reference Data for Radio Engineers that shows all this. I knew staring at vector plots would pay off some day. :-)

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: 29 Jul 93 14:03:01 GMT

From: ogicse!uwm.edu!spool.mu.edu!sdd.hp.com!col.hp.com!fc.hp.com!

jayk@network.ucsd.edu

To: info-hams@ucsd.edu

References <1993Jul28.085859@IASTATE.EDU>, <CAvvEw.7J@fc.hp.com> ,

<CAw19r.3sD@news.iastate.edu>~

Reply-To : jayk@fc.hp.com

Subject : Re: -. .-- -. . .-- ...

William J Turner (wjturner@iastate.edu) wrote:

: In article <CAvvEw.7J@fc.hp.com> jayk@fc.hp.com writes:

: >Lots of ops finish a QSO with callsign then ...-.- ..

: True, but my point was that is technically incorrect, not that it doesn't
: happen. Besides, the ...-.- .. is actually or "shave and a
: haircut, two bits". I think someone did the SK at the end and someone else

: thought it was "Shave and a haircut" and it grew from their.

: There are many procedural calls that are not used correctly. Many hams send
: SK last. Many always send K and never KN (not incorrect, though). And many
: send the K very long. Ie, ----- . -----

I don't consider: NØRDV de KØGU ⁻⁻⁻SK to be incorrect. Why would you say
your key is silent before it is. The intent of the SK is not the first
part of "Shave and a haircut". I long ago started sending just . . for that.
But I'm probably violating somebody's operating manual procedure. But in
this case it seems most everyone else does too.....

73, Jay KØGU jayk@fc.hp.com

End of Info-Hams Digest V93 #920
